

# ABSTRACT

An improvement in a process for the production of ethylbenzene from a dilute ethylene stream wherein an ethylene-containing stream derived from a cracking process is directed to an ethylene fractionator for separation of ethylene and ethane. The improvement includes providing the dilute ethylene stream by liquefying and separating out a portion of the ethylene-containing stream prior to directing the remainder of the ethylene-containing stream to the ethylene fractionator and/or by drawing off a side stream from the ethylene fractionator; and, directing the dilute ethylene stream as a feed to an alkylator for alkylation with benzene to produce ethylbenzene.